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CALIFORNIA FOREST AND RANGE
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FOREST STATISTICS FOR KICKITAT COUNTY, WASHINGTON

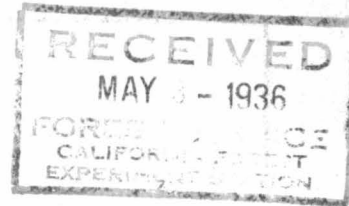
U. S. Forest Service. Pacific Northwest Forest Experiment Station

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
330 GIANNINI HALL, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION



ADDRESS REPLY TO
DIRECTOR
AND REFER TO



424 U. S. COURT HOUSE
MAIN AND SIXTH STREETS
PORTLAND, OREGON

May 4, 1936.

R-NW
Forest Survey

California Forest Station,
332 Giannini Hall,
Berkeley, California.

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K661

Dear Sir:

Enclosed is a copy of "Forest Statistics for Klickitat County, Washington". This is the fifth of the Forest Survey reports for counties in eastern Oregon and eastern Washington and is similar to those already sent you. The explanatory text which accompanied the first report should be referred to in connection with this and other reports for counties in eastern Oregon and eastern Washington.

Forest statistics published to date include all counties in western Oregon and western Washington; Klamath, Wasco and Jefferson counties in eastern Oregon, and Yakima County in eastern Washington. Additional copies of these reports will be furnished upon request.

Very truly yours,

THORNTON T. MUNGER, Director

By

H. J. Andrews

Acting

Enclosure

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
330 GIANNINI HALL, UNIVERSITY OF CALIFORNIA
BERKELEY, CALIFORNIA

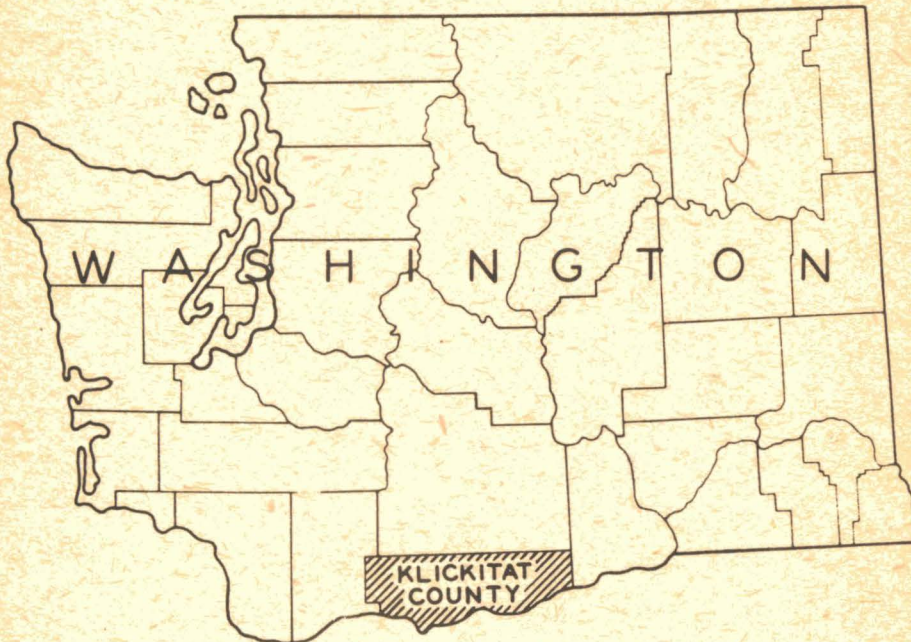
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FOREST STATISTICS FOR Klickitat County, Washington

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no 61

FROM THE INVENTORY PHASE OF THE FOREST SURVEY

Forest survey report no. 61



U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION
THORNTON T. MUNGER, DIRECTOR

H. J. ANDREWS, IN CHARGE OF FOREST SURVEY R. W. COWLIN, ASSISTANT
EDWARD D. BUELL, IN CHARGE OF FIELD AND OFFICE WORK
IN KLICKITAT COUNTY

PORTLAND, OREGON

MAY 1, 1936

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
330 C
PORTLAND, OREGON

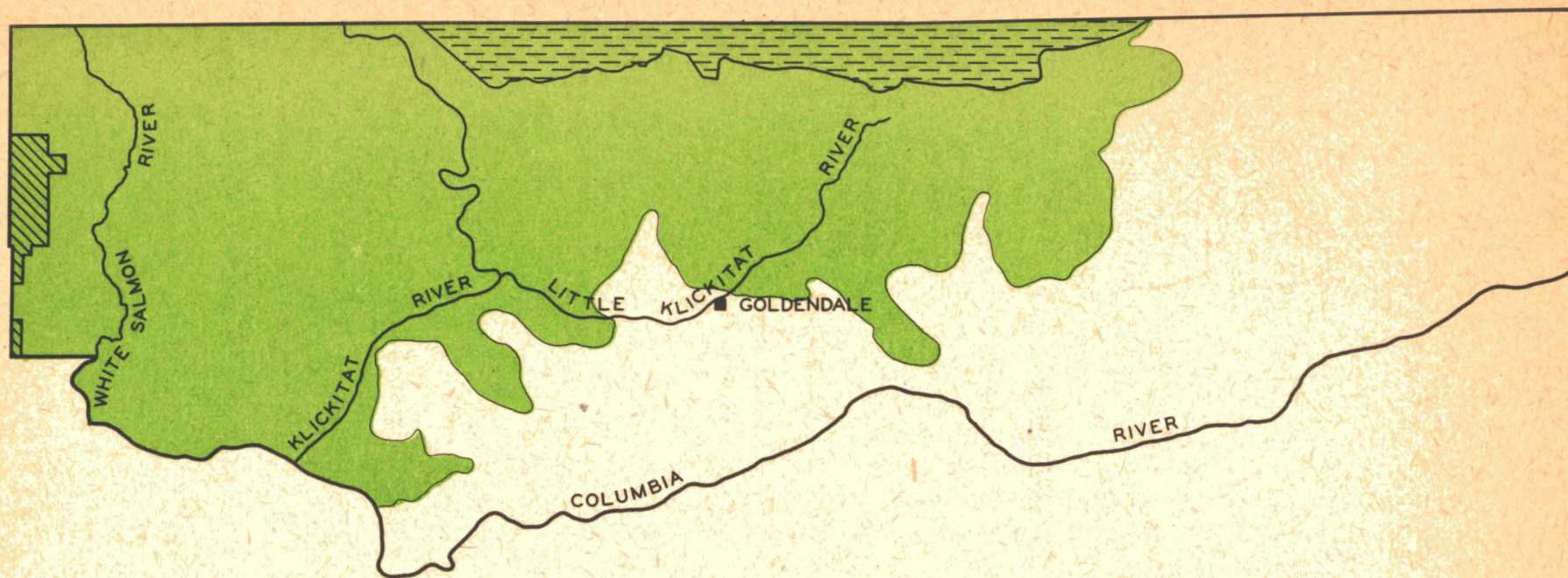


FIGURE 1

OUTLINE MAP
OF
KLICKITAT COUNTY
WASHINGTON

1936

LEGEND

- | | | | |
|---|----------------|---|------------------------------|
|  | FOREST ZONE |  | COLUMBIA
NATIONAL FOREST |
|  | NONFOREST ZONE |  | YAKIMA
INDIAN RESERVATION |

SCALE



FOREST STATISTICS FOR KLICKITAT COUNTY, WASHINGTON

By Edward D. Buell^{1/}

A forest inventory of Klickitat County, Washington, is presented in the accompanying four tables and four figures. These are some of the results of a survey made of this county in 1935 as a part of a national survey of forest resources.^{2/} A description of the methods used in the survey and detailed definitions of types are given in "The Forest Survey of Eastern Oregon and Eastern Washington", an explanatory text that should be read in connection with the forest statistics for the county.

Location and Description of County

Klickitat County is located in south central Washington, with its entire southern boundary formed by the Columbia River. It is approximately 85 miles long, varies from 15 to 30 miles wide and has a total land area of 1,168,000 acres (figure 1). The topography of the eastern and southern parts of the county is characterized by deep narrow canyons that break the continuity of the generally rolling terrain. The western and northern parts, occupied by the Cascade Range, are mountainous. Bordering the Columbia River the Cascade Range is not as rugged as it is in most other parts of its length. The Simcoe Mountains, a spur of the Cascades extending eastward from Mt. Adams along the northern border, contain the highest elevation in the county reaching 5,500 feet at some

-
- 1/ THE FIELD AND OFFICE WORK OF THE FOREST SURVEY OF KLICKITAT COUNTY WAS DONE BY EDWARD D. BUELL, P. N. PRATT, W. V. S. LITCHFIELD, H. M. WOLFE, M. J. LAURIDSEN, L. E. TUCKER, E. H. EDDY, R. W. COX, L. W. HUNTINGTON, H. E. MILLER, E. A. ERICKSON, G. N. ALLMAN, A. W. HODGMAN, AND F. H. VOGEL.
 - 2/ OREGON AND WASHINGTON WERE DIVIDED FOR PURPOSES OF THE SURVEY INTO TWO REGIONS, (1) THE DOUGLAS FIR REGION, CONSISTING OF THAT PART OF BOTH STATES WEST OF THE SUMMIT OF THE CASCADE RANGE, AND (2) EASTERN OREGON AND EASTERN WASHINGTON, THAT PART OF BOTH STATES EAST OF THE SUMMIT OF THE CASCADE RANGE. EACH REGION WAS DIVIDED INTO FOREST-SURVEY UNITS COMPOSED OF ONE OR MORE COUNTIES. AT A LATER DATE A REPORT WILL BE ISSUED FOR EACH SURVEY UNIT PRESENTING A TEXTUAL DESCRIPTION OF THE UNIT, DETAILED INVENTORY SUMMARIES, AND STATISTICS OF GROWTH AND DEPLETION ANALYZED IN THE LIGHT OF THE INVENTORY. FINALLY, A REGIONAL REPORT WILL BE ISSUED WHICH WILL SUMMARIZE THE UNIT REPORTS, PRESENTING AND DISCUSSING FINDINGS FOR THE REGION AS A WHOLE. THE REGIONAL REPORT WILL INCLUDE AN INTERPRETATION OF THE FOREST-SURVEY DATA AS RELATED TO OTHER ECONOMIC DATA AND A COMPREHENSIVE ANALYSIS OF THE REGIONAL FOREST SITUATION FROM BOTH A PHYSICAL AND AN ECONOMIC STANDPOINT.

points. These mountains consist chiefly of rounded ridges separated by deep narrow canyons.

Precipitation varies greatly within the county lessening from west to east and this has a marked influence on the vegetative cover. In the west the cover is dense and is predominately forest growth; in the east it is sparse and consists mostly of sagebrush and other herbaceous plants. According to the records of the U. S. Weather Bureau the average annual precipitation at the three stations within the county where data have been recorded for at least 25 years is as follows: at White Salmon in the extreme west portion 30.5 inches; at Goldendale in the central portion 15.8 inches; and at Sixprong in the extreme east portion 8.3 inches. All of these stations are between 1,000 and 2,000 feet above sea level. At higher elevations in the northwestern part of the county average annual precipitation is likely well over 40 inches.

The main drainage systems of the county slope south and are tributary to the Columbia River. The Klickitat and White Salmon Rivers, the county's two important streams, drain the west half. Rock Creek, Big Horn Canyon, and Alder Creek drain the east half. These streams flow along the bottoms of very narrow valleys that in places approximate gorges. These valleys are a great hindrance to any type of travel other than that directly up or down the streams.

Klickitat County's transportation facilities are of three types; road, rail, and water. The Evergreen Highway enters the county from the west at Underwood, follows the Columbia River to Maryhill, then turns north and passes through Goldendale enroute to Yakima. The Seattle, Portland, and Spokane Railroad follows the southern boundary of the county for its entire length. A branch line of this railroad goes up the Klickitat River and Swale Canyon terminating at Goldendale. The Columbia River is navigable to river craft of various types and furnishes a means of cheap transportation of bulky commodities such as grain and lumber.

According to the Bureau of the Census, the inhabitants of Klickitat County numbered 9,825 in 1930. This was a slight increase over the 1920 figure but below that of 1910. The population is predominately rural, with about one-half of the people who are engaged in gainful occupation residing on farms. Goldendale is the only city of 1,000 or more inhabitants in the county. Its population in 1930 was 1,116.

Land Classification and Use

Klickitat County contains two broad land use zones, the non-forest zone in the east and the south and the forest zone in the west and north (figure 1). According to the Bureau of the Census 55.8 percent of the county's area is in farm ownership including farm woods

managed by farm operators. The Forest Survey places the area of non-forest land in the county at 53.9 percent of the total. It is apparent from the close correlation of these figures that practically all the nonforest land of the county is utilized as an agricultural resource either for crops or for pastures. Cash-grain crops and stock raising are the most important types of agricultural use; wheat, beef cattle and sheep being the county's most valuable exports. No reclamation projects are situated in such a manner as to furnish facilities for large scale irrigation in the agricultural section so it is only where local irrigation development has taken place that farmers have the advantages derived from watering during the dry summer months. There are small local irrigation projects in the vicinity of Glenwood and Guler; along the Columbia a few farms, so located that pumping is feasible, use water from the river.

Forest land occupies 46.1 percent of the county's area. It occurs as an uninterrupted belt in the extreme west portion and extends eastward along the slopes of the Simcoe Mountains for a distance of approximately 60 miles and then it becomes a fringe of trees strung along the canyon bottoms for a few miles. The present forest cover in the upper part of the mountainous area is mainly old-growth timber stands predominately ponderosa pine and Douglas fir. At lower elevations the forests are mostly second-growth stands resulting from the removal of virgin timber by logging or fire. The production of commercial timber is the most valuable use of this land. Another important use of the forest land of the county is for stock range. Cattle and sheep utilize the forage produced on the forested areas during the spring and summer after the dry open ranges have become depleted.

A large majority of the forest land and the timber volume of the county is in private ownership (tables 1 and 2, figure 3). Approximately 75 percent of the land and 70 percent of the volume is owned privately, 10 percent of the land and 13 percent of the volume is owned by the State, 8 percent of the land and 10 percent of the volume is owned by Indians and the remainder or 7 percent of both land and volume is divided between the Federal Government and the county.

Forest Cover Types

The Forest Survey classified the 539,000 acres of forest land in Klickitat County into 24 forest cover types, varying from those with fine quality merchantable timber to those of little or no commercial value. Detailed information on these, as well as the nonforest land types, is found in tables 2 and 3 and figure 4. Ponderosa pine types are predominant in the county, occupying about 70 percent of the forest land with Douglas fir types, accounting for 20 percent of the forest land, in second place. The remaining forest area is composed mostly of forest types of small commercial importance.

An examination of the inch-to-the-mile forest survey type map of Klickitat County^{3/} reveals that the ponderosa pine stands form a belt that extends the length of the forest zone along the northern border of the county and is adjacent to the nonforest zone along the Klickitat River south to the Columbia River. The pine belt has an average width of approximately 8 miles. The composition of most of the stands is 80 percent or more of ponderosa pine accompanied by small amounts of lowland white fir, Douglas fir, and western larch. The northern part of the belt consists mostly of old-growth stands and the southern part is predominately second-growth stands.

The Douglas fir types are confined to the west portion of the forest zone where they occur over an area approximately 18 miles square. Timber stands above and below merchantable size intermingle throughout this area. Considerably less than half the total extent of the Douglas fir types is occupied by old-growth stands.

The county contains little noncommercial forest land. Along the edge of the forest zone are patches and long stringers of forest land predominately oak.

Saw-log Types

Types in this category occupy approximately 55 percent of the forest land in Klickitat County. They consist almost entirely of the various ponderosa pine, Douglas fir, and pine mixture timber types in which most of the volume is in trees 22 inches or more in diameter. The ponderosa pine types far surpass the Douglas fir and pine mixture types in area and economic importance.

Saw-log types in which ponderosa pine is the key species and in which no cutting has occurred, amount to 224,080 acres. Pure ponderosa pine, (type 20.5) is the most important type in the county. It occurs chiefly along the slopes of the Simcoe Mountains and reaches its best development in the drainage basins of the Klickitat and White Salmon Rivers, particularly along the north boundary of the county between Glenwood and Guler. In the west portion of the forest zone, this type is composed of tall well-formed trees and has an average stand per acre of about 12 M board feet. In the east portion it consists of short timber with an average stand per acre of about 6 M board feet. Ponderosa pine, large (type 20) and pine mixture, large (type 27) are found mostly in the west half of the forested section. In these types ponderosa pine has as associates Douglas fir, lowland white fir, western larch, and occasionally other species. Stands per acre vary greatly within these types with the lowest at about 3 M board feet and the highest at 40 M board feet or more. The average stand per acre for the three mature pine types is approximately 10 M board feet. Pine woodland although it occupies 26,055 acres contributes little to the county's forest wealth because of the scattered

^{3/} FULL INFORMATION REGARDING FOREST-SURVEY MAPS OF OREGON AND WASHINGTON AND DIRECTIONS FOR OBTAINING THEM WILL BE FURNISHED UPON REQUEST.

distribution of the timber and low volume per acre.

The Douglas fir types of saw-log size occupy 77,330 acres, practically all lying west of the Klickitat River. They become progressively more important from east to west until they dominate the forest stands in the extreme west portion of the forest zone. The character of the Douglas fir timber encountered also improves toward the westward from the Klickitat River until some of the large second-growth stands are comparable to many of those of the Douglas fir region. The old-growth types are generally of a poorer quality than those west of the crest of the Cascade Range.

Immature Types

These types occur over approximately 170,000 acres in the county. Ponderosa pine is the key species over 134,200 acres, Douglas fir types occupy 29,720 acres, and small pine mixture stands occur on 6,385 acres.

The immature ponderosa pine and pine mixture types (Nos. 21, 22 and 28) are scattered over the whole pine belt but are more prevalent on the southern edge of the belt adjacent to the nonforest zone. The whole or partial removal of the original stand by logging is by far the most important form of depletion that has produced these immature types. Over 124,160 acres of types 21, 22 and 28 are the result of cutting. Stocking conditions on these areas are encouraging, about 28 percent are fully stocked (70 to 100 percent), 56 percent are medium stocked (40 to 69 percent), and 16 percent are poorly stocked (10 to 39 percent). Clear cutting has taken place on 75,485 acres while a residual stand of one thousand or more board feet per acre remains on 48,695 acres.

Depletion of old-growth stands by causes other than logging has created immature ponderosa pine and pine mixture types on 16,405 acres. Of this amount 10,040 acres has a present volume per acre of one thousand board feet or more. Fire, insects, and wind are the depleting agents. Fire is particularly important adjacent to the nonforest zone. In 1931 a wind storm of destructive force did considerable damage to mature timber in the north central part of the county along the drainage of the Klickitat River. For the zone affected the average loss was from 20 to 25 percent of the volume of the stand with occasional patches running over 50 percent. A severe epidemic of the western pine beetle (Dendroctonus brevicornis) followed the wind storm, lasting from 1931 to 1934. The insect losses added to the windthrow reduced the original volume of the stands from 20 to 50 percent with an average loss of around 35 percent.

Immature Douglas fir stands below 22 inches in diameter occupy 29,720 acres distributed over the western part of the county.

Over most of this area the stands are large Douglas fir poles (type 9A). The remainder is occupied by small Douglas fir poles (type 9B) and Douglas fir seedlings and saplings (type 10). They are chiefly the result of logging except on the Columbia National Forest where fire was the important depleting factor. More than 75 percent of the types are well or medium stocked.

Other Forest Types

Oak woodland (type 4), nonrestocked cutovers (types 35A and 35B), and noncommercial rocky areas (type 38) are the remaining types in the county. The oak woodland type is found on the foothills and in the canyons along the southern edge of the forest zone. The nonrestocked cutovers are distributed in small areas over the forest zone. Noncommercial rocky areas usually occur along the steep slopes of the deep canyons characteristic of the county.

Saw-Timber Volume

The saw-timber volume, shown by species in table 1 and figure 2, totals $3\frac{1}{2}$ billion board feet. Although 12 different species occur in the county in measurable quantities, only ponderosa pine and Douglas fir with about a billion and a half board feet each are important. Although total volume of each is about the same, the ponderosa pine is distributed over considerably more area. The commercial value of the pine is much greater than that of the Douglas fir, it is more accessible and is utilized more closely. The Douglas fir volume is found mostly in trees 22 to 40 inches in diameter. Its greater volume in comparison to its type area is due to its relatively high volume per acre and its occurrence in other types as an associate tree.

Forest Industries

The industrial development of Klickitat County is based chiefly on its forest resources.

The logging operation of the J. Neils Lumber Company is by far the most important in the county. This company uses power skidders and tractors in the woods and rail transportation from woods to mill. Its rated daily logging capacity is 140 M board feet. There are two smaller logging operations with headquarters at Goldendale and others at Lyle, Glenwood, and White Salmon. On these operations tractors or horses are used to do the skidding and transportation to the mill is by truck.

The topography and timber of Klickitat County are suitable to the use of light equipment in logging. The various drainage basins are best logged as individual units because of the deep narrow character of the canyons. Most of the logs are likely to be transported south

and west for manufacture at points on the railroad.

According to the lumber census of 1934, Klickitat County had 21 active sawmills and the total cut was 46,494 M board feet. These mills ranged in capacity from 10 to 80 M board feet per 8-hour shift. Mills of important size are located at Klickitat, Goldendale, Lyle, White Salmon, and Underwood. If completed, a proposed development at Glenwood will add that town to the list.

At present the J. Neils Lumber Company's plant at Klickitat is the most important wood-using unit in the county. This plant consists of a sawmill with a rated capacity of 80 M board feet per 8-hour shift, a planing mill, dry kilns and a box factory. All the raw material for this plant comes from within the county.

The various logging operations in the county give employment to about 200 woods workers, while the average number of employees at the sawmills and wood working plants is about 525.

In 1934 approximately 55 percent of the lumber produced in Klickitat County was milled in the central part, 25 percent in the western part, and 20 percent in the eastern part. Approximately 50 percent of that produced in the western part was Douglas fir and 50 percent ponderosa pine; in the central part 30 percent was Douglas fir and 70 percent was ponderosa pine; in the eastern part less than 5 percent was Douglas fir while over 95 percent was ponderosa pine. It is not likely that these proportions have varied much in the past and will undoubtedly not change much in the future.

In 1935 there was increased activity both in the woods and in the mills. Old mills which had been idle began to operate. In some instances new mills were built with new capital from outside the State. There were many small logging operations in the central and western parts of the county. Oftentimes they were logging over areas which had been selectively logged twice before.

Practically the total log production is milled within the county; a few logs are transported to Oregon for manufacture. Practically all of the lumber that leaves the county goes by rail.

In addition to lumber and box shuck, fuel wood is an important product. Since pioneer days the people in the agricultural part of the county have been dependent upon the forest for fuel.

On the basis of the remaining supply of merchantable timber, the general condition of second-growth areas and the relatively moderate rate of cutting practiced to date, there is every reason to believe that the forests of Klickitat County can furnish the local logging and milling industries a supply of raw material for many years to come.

FOREST STATISTICS FOR KLICKITAT COUNTY, WASHINGTON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 1. VOLUME OF TIMBER BY SPECIES AND BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 1, 1935

TREES 12" AND MORE IN D.B.H.
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

SYM- VEY- SUR-:	SPECIES ^{1/}				FEDERAL			TOTAL
		PRIVATE	STATE, AVAILABLE	COUNTY	INDIAN, TRIBAL	PUBLIC DO- MAIN, AVAIL-	NATIONAL FOREST,	
			FOR		AND TRUST	ABLE FOR	AVAILABLE	
BOL :			CUTTING		ALLOTMENT	CUTTING ^{2/}	FOR CUTTING:	
Y :	PONDEROSA PINE	1,229,052	171,111	14,989	287,996	16,307	2,349	1,721,804
W :	WESTERN WHITE PINE	1,367	1,671		110	50	5,313	8,511
LP :	LOGSPOLE PINE	820	10	3	506			1,339
DF :	DOUGLAS FIR	1,048,110	273,407	53,050	36,966	10,409	141,044	1,562,986
C :	WESTERN RED CEDAR	2,345	1,151	210		70	2,785	6,561
H :	WESTERN HEMLOCK	2	340				1,703	2,045
WF :	LOWLAND WHITE FIR	96,236	15,133	16	11,887	290	36,596	160,158
A :	SILVER FIR		3,469				1,235	4,704
WL :	WESTERN LARCH	11,158	993	155	8,828	240	255	21,629
ES :	ENGELMANN SPRUCE	1,744	10	3	1,173			2,930
BC :	NORTHERN BLACK COTTONWOOD	770	60					830
RA :	RED ALDER	76				25		101
	TOTAL SAW TIMBER	2,391,680	467,355	68,426	347,466	27,391	191,280	3,493,598

^{1/} SPECIES NOT LISTED HERE THAT OCCUR IN THE COUNTY ARE (1) OREGON WHITE OAK AND ASPEN, VOLUMES OF WHICH WERE DETERMINED IN CORDS ONLY, AND (2) ALPINE FIR, YEW, BIGLEAF MAPLE, OREGON ASH, AND WHITE ALDER, WHICH OCCUR IN NEGLIGIBLE QUANTITIES.

^{2/} INCLUDES THE TIMBER ON 220 ACRES OF RAILROAD SELECTION PENDING.

FOREST STATISTICS FOR KLICKITAT COUNTY, WASHINGTON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 2. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 1, 1935

SUR- VEY TYPE NO.	TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	INDIAN, TRIBAL AND TRUST ALLOTMENT	FEDERAL PUBLIC DO- MAIN, AVAIL- ABLE FOR CUTTING 1/	NATIONAL FOREST, AVAILABLE FOR CUTTING	TOTAL	
	WOODLAND:								
4	OAK; FORESTS CONTAINING 60% OR MORE OF OAK	21,825	1,275	1,025	95	1,835		26,055	
5B	SCATTERED JUNIPER; JUNIPER FORESTS OCCUPYING 5 TO 10% OF THE LAND AREA	185	60					245	
5 1/2	PONDEROSA PINE WOODLAND; SCATTERED STANDS OF MATURE PONDEROSA PINE ON UNFAVORABLE SITES	15,580	870	690	5,440	1,665		24,245	
	PONDEROSA PINE; FORESTS CONTAINING 50% OR MORE OF PONDEROSA PINE								
20	PONDEROSA PINE, LARGE; FORESTS CONTAINING 50 TO 80% OF PONDEROSA PINE, MORE THAN 22" DBH	36,015	2,555	915	3,925	330	130	43,870	
20.5	PURE PONDEROSA PINE, LARGE; FORESTS CONTAINING 80% OR MORE OF PONDEROSA PINE, MORE THAN 22" DBH	88,960	14,500	500	22,775	2,475		129,210	
21	PONDEROSA PINE, SMALL; 12 TO 22" DBH	52,550	2,880	1,520	940	845		58,735	
22	PONDEROSA PINE SEEDLINGS, SAPLINGS, AND POLES; LESS THAN 12" DBH	65,300	4,920	2,920	795	1,530		75,465	
	PINE MIXTURE; MIXED FORESTS CONTAINING 20 TO 50% OF PONDEROSA PINE								
27	PINE MIXTURE, LARGE; 12" OR MORE DBH	21,190	1,910	710	1,785	380	780	26,755	
28	PINE MIXTURE, SMALL; LESS THAN 12" DBH	5,840	45	295	165	40		6,385	
	DOUGLAS FIR; FORESTS CONTAINING 60% OR MORE OF DOUGLAS FIR								
7	DOUGLAS FIR, SMALL OLD GROWTH; 22 TO 40" DBH	16,470	3,300	830	150	50	120	20,920	
8	DOUGLAS FIR, LARGE SECOND GROWTH; 22 TO 40" DBH	32,940	14,405	1,760		660	6,645	56,410	
9A	DOUGLAS FIR, LARGE POLES; 12 TO 20" DBH	13,760	645	1,175		385		15,965	
9B	DOUGLAS FIR, SMALL POLES; 6 TO 10" DBH	2,905	460	170		55	240	3,830	
10	DOUGLAS FIR, SEEDLINGS AND SAPLINGS; LESS THAN 6" DBH	6,420	1,850	680		35	940	9,925	
	UPPER-SLOPE MIXTURE; MIXED FORESTS OF WESTERN LARCH, DOUGLAS FIR, ENGELMANN SPRUCE, LOWLAND WHITE FIR, OR WESTERN WHITE PINE; OCCASIONALLY OTHER SPECIES								
27 1/2	UPPER-SLOPE MIXTURE, LARGE; 12" OR MORE DBH	640	5	5	980			1,630	
28 1/2	UPPER-SLOPE MIXTURE, SMALL; LESS THAN 12" DBH	80			170			250	
	LODGEPOLE PINE; FORESTS CONTAINING 50% OR MORE OF LODGEPOLE PINE								
26	LODGEPOLE PINE, MEDIUM; 6 TO 10" DBH	175	5		155			335	
26A	LODGEPOLE PINE, SMALL; LESS THAN 6" DBH				290			290	
	HARDWOOD; FORESTS CONTAINING 50% OR MORE OF NORTHERN BLACK COTTONWOOD AND RED ALDER								
31.5	HARDWOOD, LARGE; 12" OR MORE DBH	430	30					460	
33	SUBALPINE; FORESTS AT UPPER LIMITS OF TREE GROWTH, USUALLY UNMERCHANTABLE	2,465	445	5	3,320	150		6,385	
	NONRESTOCKED CUTOVERS; LOGGED AREAS NOT SATISFACTORILY RESTOCKED AND NOT CARRYING A RESIDUAL STAND OF 1 M OR MORE PER ACRE								
35A	CUT SINCE BEGINNING OF 1920	9,235	215	515		305		10,270	
35B	CUT BEFORE 1920	490	220	40				750	
	DEFORESTED AREAS; NONRESTOCKED AREAS DEFORESTED OTHERWISE THAN BY CUTTING								
37	DEFORESTED BURNS	3,225	3,980	540	55	480	330	8,610	
38	NONCOMMERCIAL ROCKY AREAS	8,390	445	755	65	2,315		11,970	
TOTALS FOR FOREST LAND		405,070	55,020	15,050	41,105	13,535	9,185	538,965	
1 & 2; NONFOREST LAND; CULTIVATED, GRASS, SAGEBRUSH, BARRENS, CITIES, UNMEASURED WATER SURFACES, ETC.		628,730 ACRES OF NONFOREST LAND UNCLASSIFIED BY OWNERSHIP						305	629,035
TOTALS FOR COUNTY								9,490	2/1,168,000

1/ INCLUDING 220 ACRES OF RAILROAD SELECTION PENDING.

2/ THE TOTAL AREA OF THE COUNTY, ACCORDING TO THE BUREAU OF THE CENSUS, IS 1,168,000 ACRES. OF THIS TOTAL, 539,270 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR KLICKITAT COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 3. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 1, 1935

TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	INDIAN, TRIBAL AND TRUST ALLOTMENT	FEDERAL		TOTAL
					PUBLIC DO- MAIN, AVAIL- ABLE FOR CUTTING ^{1/}	NATIONAL FOREST, AVAIL- ABLE FOR CUTTING	
WOODLAND: OAK AND JUNIPER SURVEY TYPES 4 AND 5B	22,010	1,335	1,025	95	1,835		26,300
HARDWOOD: NORTHERN BLACK COTTONWOOD AND RED ALDER SURVEY TYPE 31.5	430	30					460
PONDEROSA PINE 12" OR MORE DBH SURVEY TYPES 5 ^{1/2} , 20, 20.5, 21 AND 27	214,295	22,715	4,335	34,865	5,695	910	282,815
PONDEROSA PINE LESS THAN 12" DBH SURVEY TYPES 22 AND 28	ON CUTOVER AREAS 66,125 ON OLD BURNS 5,015 TOTAL 71,140	4,680 285 4,965	3,100 115 3,215	315 645 960	1,265 305 1,570		75,485 6,365 81,850
CONIFERS 12" OR MORE DBH OTHER THAN PONDEROSA PINE AND LODGEPOLE PINE SURVEY TYPES 7, 8, 9A AND 27 ^{1/2}	63,810	18,355	3,770	1,130	1,095	6,765	94,925
CONIFERS LESS THAN 12" DBH OTHER THAN PONDEROSA PINE AND LODGEPOLE PINE SURVEY TYPES 9B, 10, AND 28 ^{1/2}	ON CUTOVER AREAS 6,340 ON OLD BURNS 3,065 TOTAL 9,405	155 2,155 2,310	510 340 850		25 65 90		7,030 6,975 14,005
LODGEPOLE PINE LESS THAN 12" DBH SURVEY TYPES 26 AND 26A	175	5		445			625
NONCOMMERCIAL AREAS SURVEY TYPES 33 AND 38	10,855	890	760	3,385	2,465		18,355
NONRESTOCKED CUTOVER AREAS AND DEFORESTED BURNS SURVEY TYPES 35A, 35B, AND 37	12,950	4,415	1,095	55	785	330	19,630
TOTAL FOR FOREST LAND	405,070	55,020	15,050	41,105	13,535	9,185	538,965
NONFOREST LAND SURVEY TYPES 1 AND 2	628,730 ACRES OF NONFOREST LAND UNCLASSIFIED BY OWNERSHIP					305	629,035
TOTAL FOR COUNTY						9,490	2/ 1,168,000

^{1/} INCLUDING 220 ACRES OF RAILROAD SELECTION PENDING

^{2/} THE TOTAL AREA OF THE COUNTY, ACCORDING TO THE BUREAU OF THE CENSUS, IS 1,168,000 ACRES. OF THIS TOTAL, 539,270 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR KLICKITAT COUNTY, WASHINGTON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 4. AREA OF FOREST LAND, BY SITE QUALITY
DATA CORRECTED TO JULY 1, 1935

TYPE	SITE QUALITY CLASS ^{1/}	AREA			
		ACRES	PERCENTAGE OF—		
			CONIFEROUS	TOTAL	TOTAL
			FOREST LAND CLASSIFIED AS TO SITE QUALITY		
PONDEROSA PINE AND PONDEROSA PINE MIXTURE	PONDEROSA PINE	I	480	0.1	0.1
		II	3,785	0.8	0.7
		III	51,005	10.4	9.4
		IV	192,925	39.1	35.8
		V	106,690	21.6	19.8
		VI	16,670	3.4	3.1
DOUGLAS FIR AND UPPER SLOPE MIXTURE	DOUGLAS FIR		371,555	75.4	68.9
		III	55,370	11.2	10.3
		IV	57,760	11.7	10.7
		V	8,450	1.7	1.6
			121,580	24.6	22.6
TOTAL			493,135	100.0	91.5
LODGEPOLE PINE			625		0.2
JUNIPER			245		
NONCOMMERCIAL ROCKY AREAS			11,970		2.2
SUBALPINE			3/6,475		1.2
OAK			26,055		4.8
HARDWOOD			460		0.1
TOTAL			45,830		8.5
GRAND TOTAL			538,965		100.0

^{1/} THE "SITE QUALITY" OF A FOREST AREA IS ITS RELATIVE PRODUCTIVE CAPACITY, DETERMINED BY CLIMATIC, SOIL, TOPOGRAPHIC, AND OTHER FACTORS. THE INDEX OF SITE QUALITY IS THE AVERAGE HEIGHT OF THE DOMINANT STAND AT THE AGE OF 100 YEARS. SIX SITE QUALITY CLASSES ARE RECOGNIZED FOR PONDEROSA PINE AND FIVE FOR DOUGLAS FIR, CLASS I BEING IN EACH CASE THE HIGHEST. IN THE SURVEY THE PONDEROSA PINE AND DOUGLAS FIR CLASSIFICATIONS, RESPECTIVELY, WERE USED NOT ONLY FOR TYPES OF WHICH THESE SPECIES ARE CHARACTERISTIC COMPONENTS BUT FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.

^{2/} THE COUNTY HAS A TOTAL AREA OF 1,168,000 ACRES (ACCORDING TO THE BUREAU OF THE CENSUS) OF WHICH 538,965 ACRES (46.1 PERCENT) IS FOREST AND 629,035 ACRES (53.9 PERCENT) IS NONFOREST LAND.

^{3/} INCLUDES 90 ACRES OF DEFORESTED BURN, (TYPE 37).

FOREST STATISTICS FOR KLINKITAT COUNTY, WASHINGTON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 2. DISTRIBUTION OF SAW-TIMBER VOLUME BY SPECIES, ALL OWNERSHIP CLASSES (FROM TABLE 1)

EACH TREE = 50,000 M BOARD FEET

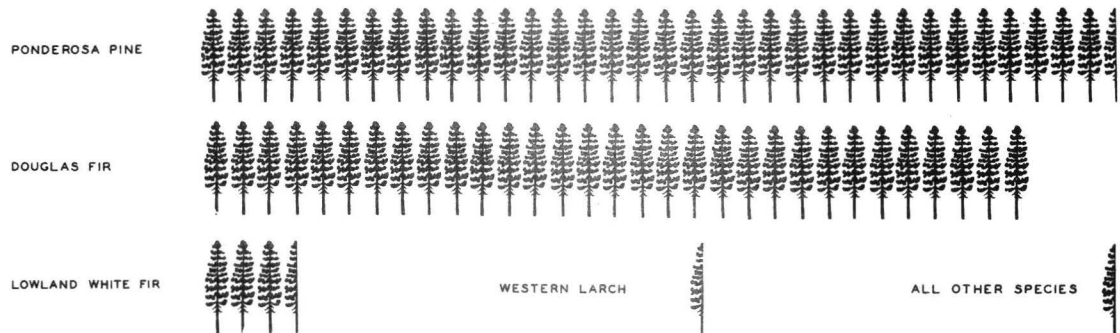


FIGURE 3. OWNERSHIP OF FOREST LAND (FROM TABLE 2)

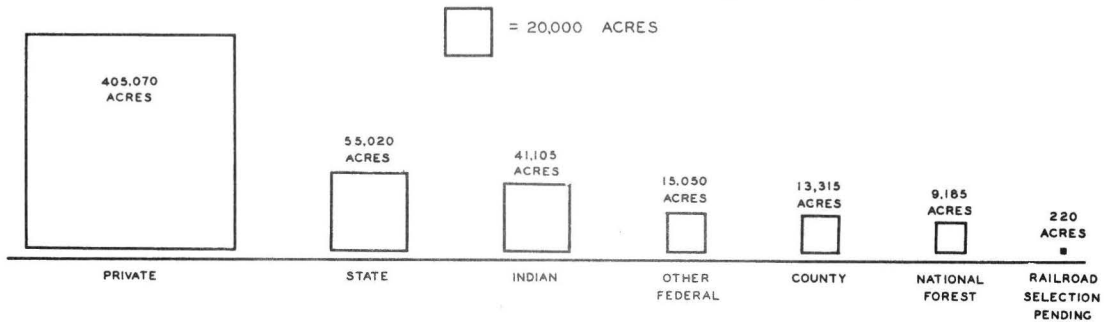


FIGURE 4. DISTRIBUTION OF FOREST LAND BY GENERALIZED TYPES, ALL OWNERSHIP CLASSES (FROM TABLE 3)

